A HANDY WIRING TABLE.

By H. R. LEYDEN.

This table is arranged to show the size of wire for all the various low potentials and percentages of loss used in practical electric lighting and for 500-volt motor and electric railway circuits. It is calculated on the assumption that the conductivity of commercial copper wire is .97 of the conductivity of pure copper, according to the Matthiessen standard. It is also assumed that the cross section of wire doubles with every three sizes of Brown & Sharpe gauge, which, though not absolutely correct, is sufficiently accurate for practical work. The safe carrying capacity is taken as four-tenths of the current required to heat underwriter's insulated wire to 212° Fahrenheit in air, or

the column headed "1.8 per cent. loss" at "110 volts," and we have No. 11 B. & S.

Or, suppose we wish to carry 60 amperes 100 feet at 220 volts and 2 per cent, less loss. From "62" in the column for "100 feet" cross to the column headed "1.8 per cent," at "220 volts," and we have No. 5 B. & S.

For 500 volts the table does not indicate above 2 per cent, loss, but higher losses and greater distances can readily be estimated by remembering that the cross-section varies inversely with the loss, and directly with the distance. In taking the size of wire from the table, care should always be taken not to exceed the safe-carrying capacity of the conductor.—Electrical Engineer, N. V.

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;	.2	.4	-5	.63	.8	ı.	1.3	1.6	2.	% Le	oss a	T 500	Vor	.TS.										
	-45	.9	1.13	1.43	1.8	2.27	2.86	3.6	4.54	% Loss at 220 Volts.					FIGURES AT TOP OF COLUMN: DIS-									
.25	-5	1.	1.25	1.57	2.	2.5	3.15	4.	5.							TANCE IN FEET FROM CENTRE OF DISTRIBUTION CURRENT IN AMPERES GIVEN BELOW.								
.45	.9	1.8	2.27	2.86	3.6	4-54	5.7	7.3	9.1	% Loss at 110 Volts.														
-5	1.	2.	2.5	3.15	4.	5.	6.3	8.	10.	% L	OSS A	T 100	Voi	.TS.										
1.	2.	4.	5.	6.3	8.	10.	12.6	16.	20.	% L	OSS A	T 50	Vola	rs.							•			
										25	50	75	100	150	200	300	400	500	600	7∞	8∞	900	1000 H	
10 9 8	13 12		16 15	16			e of			9 12 15	5 6 8	3 4 5	2 3 4	1 2 3	1 2									
7 6 5	10 9 8		14 13 12	15 14 13	15	16 15				19 24 31	10 12 15	6	5	 3 4 5	2 3 4	1 2 2	1	1						
4 3 2	7 6 5		11 10 9	12 11 10	13 12 11	13		16 15	16	38 49 62	19 24 31	13 16 20	10 12	01 8	6		2 3 4	2 2 3	1 2 2	1	1	1	1	
) 00	4 3 2	6	8 7 6			10	11	12	13,	77 97 123	38 49 62	26 32 40	19 24 31	13 16 20	12	8	5 6 8	4 5 7	3 4 5	3	2 3 4	2 3 3	AMPERES	
0000	000	3	5 4 3	6 5 4	6	7				154 195	77 97 123	52 65 82	38 49 62	26 32 40	19 24 31	13 16 20	10 12 15	8 10 14	6 8 10		5 6 8	4 6 7	5 Z	
	000	ı 0 ∞			4 3 2	5 4 3	: 5	6	1 71		154 195	104 130 164	77 97 123	52 65 82	38 49 62	32	19 24 31	16 20 25	13 16 20		10 12 15	8 11 14	5 0 0 URRENT	
		000	00 000 0000	•	0	1	1 2	3	4			208 220	154 195 220	164 130		52 65 82	38 49 62	31 39 49	26 32 40	22 28 35	19 24 31	17 22 27	15 19 24	
				0000	000 0000		00	0	1					208 220	154 195 220		77 97 123	62 78 98	52 65 82	44 56 70	38 49 62	34 43 54	31 39 49	
							0000	000								208 220	154 195 220	123 155 195	104 130 164			69 87 109	62 77 98	
Size	Size of Wite B. & S. 0000 000 00 1 2									3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Safe	Curr	ent, s	∖mp.	220	190	165	140	120	102	87	73	62	54	47	40	34	28	25	21	17	14	11	. 8	

THE LEYDEN HANDY WIRING TABLE.

seven-tenths of the current required to bring it to the same temperature when placed in moulding.

The manipulation of the table is very simple; for example, suppose we wish to carry 40 amperes 300 feet from the centre of distribution at 100 volts and 5 per cent. loss. From "40" in the column for "300 feet" cross laterally to the column headed "5 per cent. loss" at "100 volts," and we have the size of conductor as No. 3 B. & S. gauge.

The table is calculated for even percentages of loss at 100 volts. For 110 and 220 volts the percentages are fractional, but, by taking the nearest fractional percentage below the required one, the error is always on the safe side. For example, suppose we wish to carry 10 amperes 75 feet at 110 volts and 2 per cent. loss. From "10" in the column for "75 feet" cross to

PERSONAL.

Mr. Geo. Mooring, engineer at Messrs. Alexander & Kelly's mills at Brandon. Man., and a member of the C. A. S. E., paid a flying visit to Toronto a few days ago, remaining long enough, however, to make the final arrangements in connection with a life-partnership agreement entered into with one of the fair daughter's of the Queen city. Mr. Mooring and his bride carry with them to their Northwest home the best wishes of numerous friends in Ontario.

We publish elsewhere a letter from Mr. O. P. St. John, of Vancouver, late of Toronto, in reply to an enquiry by one of our subscribers. In a letter to the editor; Mr. St. John states that he is much pleased with British Columbia, is prospering and in good health, and desires to be kindly remembered to his friends among the engineers of Ontano. There are many of our readers who carry about with them kindly recollections of Mr. St. John, and who will join in reciprocating his kindly greetings.